

Meeting:	NuLeAF Steering Group, 25 April 2012
Agenda Item:	7
Subject:	Radioactive Waste Management and New Nuclear Power Stations
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Purpose:	To report on discussion at the NuLeAF seminar and on the application for approval to construct a new nuclear power station at Hinkley Point in Somerset

Introduction

This report covers:

- discussion about new build at the NuLeAF seminar on 9 March;
- input to Somerset County Council regarding issues associated with the management of radioactive waste and spent fuel at the proposed Hinkley Point C station;
- the procedure and timetable for the National Infrastructure Directorate's (NID) consideration of the application; and
- issues raised about spent fuel and radioactive waste management in representations to the IPC.

Recommendation

That the Steering Group keep developments under review and provide advice and assistance to Somerset CC, Sedgemoor DC and West Somerset DC as appropriate.

Contribution to Achieving Strategic Objectives

The initiatives are intended to contribute to the achievement of the following NuLeAF objectives:

- Seek to ensure that proposals for radioactive waste management and decommissioning of new nuclear power stations do not prejudice effective management of the nuclear legacy.
- If proposals for new nuclear power stations continue to move forward, promote debate and thinking about the ways in which this could be done to the benefit of nuclear legacy management and in accordance with the Polluter Pays Principle, including how a more coordinated across site approach could be taken in locations that have or are proposed to have multiple licensed sites.
- Liaise effectively with the New Nuclear Local Authorities Group and with local authorities addressing the radioactive waste management implications of new build and provide assistance as appropriate.

1 Discussion at the NuLeAF Seminar, 9 March

EDF's presentation to the seminar focused mainly on spent fuel management. Key points were:

- Operator plans must be robust against uncertain timescales and provide for interim storage. EDF's plans for interim storage of spent fuel pending geological disposal are consistent with Government policy. The technology options for spent fuel storage include dry storage (in casks, canisters or vaults) or wet storage in ponds. EDF's comparison of technical and safety features shows that there is no clearly superior technology. Each technology is potentially licensable by the Office for Nuclear Regulation (ONR) and capable of meeting the Environment Agency's (EA) requirements.
- Decisions about the approach to the interim storage of spent fuel at different sites has to be based on judgements of local factors, the need to minimise project risk while providing a robust solution, and providing flexibility to meet future possible developments.
- The key areas of difference affecting the choice of dry storage at Sizewell B and proposed wet storage at Hinkley Point C (HPC) include: fuel burn-up, time in the reactor pond before transfer, fuel quantity, and fuel transfer design and the benefits of replication. The pond option has the greatest capacity to adapt to different fuel cycles over station lifetimes. The choice of wet storage for Hinkley Point C has been reviewed in the light of events at Fukushima and confirmed as the best approach.

Points made in discussion included:

- *How can EDF's conclusion that wet storage of spent fuel is preferable at Hinkley Point C be reconciled with the conclusions of the Royal Society (RS) that wherever possible dry storage should be pursued?* The RS view was based on a generic assessment, not on a case specific assessment taking into account circumstances and needs at a specific site.
- *Given the preference for dry storage of spent fuel at Sizewell B, would it not be difficult to justify a preference for wet storage at Sizewell C?* Again, a case specific assessment will be undertaken and it should not be assumed at this stage that wet storage will be proposed for Sizewell C.
- *Would approval of EDF's proposed Funded Decommissioning Programme (FDP) for Hinkley Point C be needed before the station can be built?* Yes, that is the case, and EDF have a large team working on the project, including work towards securing approval for the FDP alongside work on detailed design and other consents.
- *Is there scope for a more coordinated approach to managing the radioactive wastes from the A, B and C stations at Sizewell?* EDF recognises the importance of this and noted that the proposed re-use of land being made available on the Sizewell A site for a spent fuel store for Sizewell B is a good example of what may be possible.

The SG will recall that the RS concluded that the Fukushima accident and subsequent UK reviews mean there is now a clearer case for preferring *dry storage of spent fuel* in the longer-term, rather than pond storage as proposed by EDF for HPC. The ONR have been more circumspect in their conclusions. In the light of this, the SG agreed that ONR should be asked to take account of the views of the Royal Society on methods of spent fuel storage when requiring future new build licensees to undertake actions to underpin their approaches to such storage. A response from ONR has not yet been received.

2 Input to Somerset County Council

The SG will recall that Somerset County Council (SCC) has prepared a topic paper on the impacts of radioactive waste management at HPC. This has informed the authority's written representations on the Hinkley Point C application (see extracts below), which in turn will inform the Local Impact Report, the Statement of Common Ground and requirements and obligations associated with the proposed development.

The focus of the SCC topic paper is on the impact of long-term interim storage of Intermediate Level Waste (ILW) and spent fuel at HPC, including consideration of tangible and perceived impacts and consideration of mitigation and/or compensation measures. The topic paper is not yet available for circulation to the SG, but its key messages are contained in the authority's written representation, as outlined below in Annex 1.

The NuLeAF Executive Director has responded to requests for information and advice from SCC officers to assist their consideration of the impacts of radioactive waste management at HPC.

3 The Procedure and Timetable for Consideration of the Application

The 'Preliminary Meeting' regarding the application was held on 21 March. The primary purpose was to enable views to be expressed about the way in which the application is to be examined.

The agenda included consideration of: the then IPC¹ Examining Panel's initial view of the 'principal issues'; the methods of examination; the timetable; and hearings and site visits.

The panel's initial view was that principal issues were: traffic, the Development Consent Order, socio-economic effects, the effects on Combswich, and landscape/visual impact. The panel excluded issues such as nuclear safety, security, protection of people and the transport of nuclear material, on the grounds that it did not intend to duplicate the consideration of matters within the remit of the regulators. The panel will however be seeking advice from the regulators on matters related to the issue of licenses, permits and authorisations.

The panel also highlighted that it will not consider matters of principle that were considered and decided by Government in designating the energy NPS.

The panel set out the following draft timetable:

Local Impact Reports, statements of common ground and written representations	by 3 May
First open floor hearings	8-11 May
Comments on Local Impact Report and written representations	31 May
First Issue specific hearing on mitigation measures	26 June
Second Issue specific hearing on mitigation measures	17 July
Time reserved for open-floor hearings	3-7 Sept
Deadline for close of examination	22 Sept

¹ Note that the IPC – the Infrastructure Planning Commission – was abolished on 1 April and that its functions were absorbed into the National Infrastructure Directorate within the Planning Inspectorate.

On 27 March, the IPC issued a notice of procedural decisions made following the preliminary meeting. This explains that:

- the timetable should not be extended (despite requests from the local authorities) on the grounds that to do so would be likely to conflict with the examining authority's duty to complete the examination within the statutory timetable;
- the examining authority will consider further submissions on the timetable before making a recommendation to the Chair of the Commission or the Secretary of State, and a further procedural decision if the statutory timetable is extended;
- the examining authority will not revise the initial assessment of principle issues, but will consider all representations irrespective of whether or not they address points that are included in the principle issues; and
- the first open floor hearings are likely to take place on 9, 10, 16 and 17 May.

The notice also includes a list of the examining authority's first written questions, directed at the applicant, ONR and local authorities. Although none of these questions are directly about spent fuel and radioactive waste management, they do include a request to ONR to confirm that it is addressing flood risk and appropriateness of access arrangements (including the implications for emergency responses).

4 Representations about Spent Fuel and Radioactive Waste Management

A total of 1197 written representations were received by the IPC. Eleven of these are from local authorities, including Somerset CC (SCC), Sedgemoor DC (SDC), West Somerset DC (WSDC) and Cumbria CC (CCC). The representations are available on the PINS website at [Hinkley Point C New Nuclear Power Station | National Infrastructure Planning](#).

The representations from SCC, SDC and WSDC provide an overview of the areas of their support and objection. Areas where substantive objection remain are to be set out in further detail in Local Impact Reports.

As the Waste Planning Authority for the area containing Hinkley Point, SCC has set out its views concerning the impacts associated with the management of radioactive waste and spent fuel at the proposed new station, and resultant Community Fund requirements. These are set out in Annex 1 to this report.

The views of SDC and WSDC on the perception of major hazard risk, nuclear waste storage and consequences are set out in Annex 2.

Finally, the representation from Cumbria CC on the management of LLW is attached as Annex 3. This raises arguments about the need to look at on or adjacent-to-site disposal options, rather than rely on the willingness and ability of other parts of the country to accept lower activity wastes.

Annex 1: Extract on Radioactive Waste from Somerset County Council's Representation to the IPC

4.5.4.1 With regard to radioactive waste, NPS EN-6 makes it clear that the IPC should not consider issues relating to the proposed geological waste disposal facility (GDF) which is intended to provide a long term storage solution for higher activity waste, or low level wastes for which existing management and disposal arrangements already exist. Paragraph 2.11.4 details that "... the question of whether effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations has been addressed by the Government and the IPC should not consider this further....".

4.5.4.2 The NPS does not provide clear guidance in relation to the length of time that the waste must be stored on site prior to the provision of a GDF, only that a GDF is not programmed to be available until 'around' 2130 (sic). It states that in the absence of any proposals for further storage sites, the IPC should expect that waste will be on the site until the availability of a GDF (paragraph 2.11.5).

4.5.4.3 Annex B in Volume 2 of EN-6 suggests that "... a UK facility could be operational for the disposal of legacy ILW by about 2040, with legacy High Level Waste/spent fuel emplacement beginning around 2075. Disposal of legacy waste is estimated to be completed by around 2130...." (Paragraph B3.2).

4.5.4.4 However, Annex B provides that high level radioactive waste may have to stay on site for beyond 2130: "... in the event that geological disposal facilities are not available to accept radioactive waste in accordance with the indicative timetable set out above, the Government is satisfied that interim storage will provide an extendable, safe and secure means of containing waste for as long as it takes to site and construct a GDF..." (paragraph B.4.5).

4.5.4.5 Noting national policy, and the approach proposed by EDF in the DCO application, it should be acknowledged that there will be impacts from long term interim storage of radioactive waste and spent fuel at Hinkley Point C. More specifically the impacts will be:

- Perceived and tangible risks associated with the management of Low Level Waste (LLW), the long-term storage of Intermediate Level Waste (ILW) and, in particular, the long-term storage of spent fuel. Perceived risks to the environment and public health affect the sense of wellbeing of local people. The perception of risk linked with radioactive material is supported by relevant evidence, which will be summarised in the Local Impact Report. These risks associated with radioactive material are compounded by: concerns about flooding, which are based on the low lying nature of Somerset and the recent tragedy at the Fukushima nuclear power plant in Japan; EDF's approach toward favouring wet storage, noting that the Royal Society (in their report on Fuel Cycle Stewardship in Nuclear Renaissance) concludes that whenever possible, interim storage under dry conditions should be adopted to enhance nuclear safety and security; and uncertainty about the timeline for delivery of a Geological Disposal Facility, and hence an expectation that storage will in effect be in perpetuity for more than one generation of the local population.
- Taking a broader view, the same perceived and tangible risks may negatively impact on tourism, recreation and investment, whereby decisions taken by those who might visit or

invest in the local area are negatively impacted by the long-term presence of different levels of radioactive waste, spent fuel and associated infrastructure on-site.

- To avoid sterilisation of the site and ensure that non-energy related uses may be possible in the long-term, the local community and related authorities need to be empowered to prepare for the eventual decommissioning of radioactive waste management facilities at HPC. Such "preparedness" goes beyond the nuts and bolts of decommissioning and needs advance planning to ensure a long-term positive outcome. This will need to be considered in light of the Funded Decommissioning Programme Guidance for New Nuclear Power Stations recently published by DECC and agreed with EDF as part of the approach to decommissioning at HPC. For example, page 37 in the new DECC guidance notes that "The Base Case assumes that the final site end state will be such that all station buildings and facilities have been removed and the site returned to a state agreed with the regulators and the planning authority" and page 46 states that funding for pre-closure decommissioning planning and any planning carried out during decommissioning should be considered as part of an independent fund (rather than operational expenditure).

In the light of these impacts:

6.7.1.1 SCC, as the waste planning authority, considers that a separate Fund will be required to offset the tangible and perceived risks associated with the long-term presence of radioactive waste and spent fuel at the HPC site, in association with the DCO development proposals for the construction and operation of the HPC facility.

6.7.1.2 The requirement for such a Fund derives from planning policy and guidance and evidence on the significant long-term adverse impacts of the presence and management of radioactive waste and spent fuel. The Fund would provide positive financial support for social and economic projects to help counter-balance these impacts, offset related risks and alter the negative perception within the community and from those visiting the area of the continued long term presence of low level and intermediate level waste and, in particular, spent fuel.

6.7.1.3 Furthermore, the Fund (or funds) would need to extend to the post-operation preparedness of the site. The local community needs to be empowered to prepare for the eventual decommissioning of radioactive waste management facilities at HPC. What will be the long-term impact on the land after the facility has closed and options are considered for the site post- decommissioning? Such "preparedness" goes beyond the nuts and bolts of decommissioning a nuclear power site and needs advance planning to ensure a long-term positive outcome, considered in light of the new DECC guidance on the Funded Decommissioning Programme (as outlined in section 3.7).

Annex 2: Extract on Perception of Major Hazard Risk, Nuclear Waste Storage and Consequences from Sedgemoor and West Somerset DC Representations

3.10.2 EDF Energy's DCO application contends that the risks, perception of risk and public fear linked to the possibility of incidents, scheduled releases and discharges of radioactive material, and the storage of interim waste is wholly addressed elsewhere within the consenting regime. The Council disagrees with this and, is concerned that perception and community anxiety which stems from the possibility of a new nuclear power station (housing two nuclear reactors) is not sufficiently addressed within the DCO, or the mitigation proposals put forward.

3.10.3 Acting on behalf of communities, the Council questions the capacity and capability of the transport network to cope with a nuclear related incident. Furthermore, the Councils are concerned that there is insufficient capacity and capability across the emergency services in case of incident – especially in light of current and planned road infrastructure.

3.10.4 The Councils are concerned for residents and business that little mention is made to operational and civil contingencies in light of the inherent risks associated with constructing, operating and decommissioning a new nuclear power station. The creation of safeguarding zones around the main site raises two principal issues. The first is the implicit safety concerns for those who inhabit or work within the zones as earmarked. The second is the consequential impact on future development, plans and strategies within the local area and the additional development pressure this may cause on other settlements.

3.10.5 For the Councils, this additional pressure, plus the imposition of associated development sites is a cause for concern in terms of appropriate planning and place-shaping, especially in the context of the joint Hinkley Point C SPD between West Somerset and Sedgemoor Councils. It also requires the Requirements and Obligations attached to the DCO application to include reference to the resource, capability and financial implications for delivering (by the Council, statutory undertaker, or third party) the additional infrastructure necessary to balance out this additional development pressure.

3.10.6 Key areas of support/objection by the Councils are summarised as follows:

- (a) Objection to insufficient consideration of the fear, anxiety, and perception of risk amongst local communities linked to both - accommodating a nuclear power plant and the associated risk of nuclear incident; and utilising the site for interim waste storage. Consequentially the Council consider that there has been an inadequate mitigation response to these matters.
- (b) Objection to a lack of assessment of the negative implications of the area being associated with nuclear power and the potential for nuclear incident affecting the area's potential to attract new residents, businesses and investment and an inadequate mitigation response.
- (c) Objection to the mitigations measures relating to emergency services and other stakeholders to deliver effective civil contingency, emergency response. This is compounded by question marks over whether transport strategy and transport mitigation delivers sufficient resilience to cater for a major incident.

- (d) Objections relating to the lack of assessment associated with earmarking of safeguarding zones around the main site (linked to safety in the event West Somerset Council Relevant Representations of a nuclear incident) and the implications for place-making and delivering adopted growth strategies within Sedgemoor and West Somerset, with an appropriate mitigation response.
- (e) Objection to the lack of consideration of a phased approach to reinstatement of the main site and associated development sites if the project is not completed once started in order to minimise harm to the landscape and local communities.

Annex 3: Representation by Cumbria CC on LLW

These comments on behalf of Cumbria County Council are about Low Level Radioactive Waste management issues and mainly relate to section 7.3 of Volume 2 of the Environmental Statement. The comments are also based on representations that have been made to Somerset County Council in connection with its Minerals and Waste Development Framework draft Waste Core Strategy.

Both the Hinkley Point C proposals and the Somerset Waste Core Strategy refer only to the treatment and interim storage of radioactive wastes and make no provision for their disposal. They both rely on the willingness and ability of other parts of the country to accept their radioactive wastes, particularly the lower activity wastes.

Cumbria has been on the receiving end of such assumptions for a long time and it is considered that they are unsustainable and conflict with national policy. Cumbria will have considerable difficulties in providing for the management of radioactive wastes that arise within the county without the added burden of trying to host facilities for other parts of the country.

In the opinion of this authority, the Hinkley Point C proposals and Somerset's draft development plan do not accord with the Key Planning Objective in PPS10 that communities take more responsibility for their own waste or with its decision-making principle, for all planning strategies, of providing sufficient opportunities to meet the identified needs of the area for the management of all its waste streams.

It is understood that Somerset County Council has had pre-application discussions about a detailed proposal for an on-site LLW disposal facility for the existing Hinkley Point stations. The current status of that proposal is not known.

In the opinion of this authority, that on-site proposal needs to be brought into the public arena. The alternative that it provides needs to be considered in the Environmental Statement with the added context of the LLW that would arise from the new power station.

This authority also considers that the Hinkley Point C Environmental Statement needs to provide more detailed information, than is in Tables 7.2 and 7.3, about the different categories of radioactive wastes that would arise. This would include estimates of their volumes, when they are anticipated to arise and the waste management and disposal options that are potentially available for them.

The Hinkley Point C Environmental Statement makes references to disposals to the Low Level Waste Repository (LLWR) near Drigg in Cumbria, Table 7.2 and paragraph 7.3.27 are examples.

What needs to be understood is that there is no capacity at the LLWR for disposal of these wastes. Apart from a very small amount of capacity in an older disposal facility, the only permitted capacity is for temporary storage until 2018 when the current planning permission requires that the wastes be removed.

A planning application has been submitted for disposal facilities at the Repository but it cannot be assumed that planning permission will be granted.

Although paragraph 7.3.16 states that disposal to the LLWR in Cumbria is seen as the least desirable option, that is only when assessed against the waste hierarchy not against alternative disposal options.

One conclusion that can be drawn, after considering the published documents, is that decisions based on the Hinkley Point C Environmental Statement could be vulnerable to legal challenge. It assumes the availability of waste facilities that do not exist and it has not identified or adequately assessed alternatives.